



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

|   |  |  |   |
|---|--|--|---|
| (51) International Patent Classification <sup>7</sup> :<br><b>C07K 14/55, A61K 38/20, C07K 5/08, 5/10</b>   |  | <b>A2</b>  | (11) International Publication Number: <b>WO 00/11028</b>           |
|   |  |  | (43) International Publication Date: <b>2 March 2000 (02.03.00)</b> |
| (21) International Application Number: <b>PCT/IL99/00448</b>  |  | (81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). |   |
| (22) International Filing Date: <b>19 August 1999 (19.08.99)</b>  |  |  |   |
| (30) Priority Data:   |  |  |   |
| 9818370.0      21 August 1998 (21.08.98)      GB  |  |  |   |
| 126009      31 August 1998 (31.08.98)      IL   |  |  |   |
| 129980      16 May 1999 (16.05.99)      IL  |  |  |   |
| (71) Applicant (for all designated States except US): YEDA RESEARCH AND DEVELOPMENT CO. LTD. [IL/IL]; Weizmann Institute of Science, P.O. Box 95, 76100 Rehovot (IL).   |  |  |   |
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| <p><b>Published</b><br/>Without international search report and to be republished upon receipt of that report.</p>  |  |  |   |
| (54) Title: ANTI-INFLAMMATORY PEPTIDES DERIVED FROM IL-2 AND ANALOGUES THEREOF  |  |  |   |
| (57) Abstract   |  |  |   |
| <p>Synthetic anti-inflammatory peptides derived from the sequence of IL-2 are provided. Parent peptides of the sequences Ile-Val-Leu, Glu-Phe-Leu-Asn-Arg-Trp-Ile-Thr and Arg-Met-Leu-Thr, were obtained by elastase enzymatic digestion of IL-2, synthesized and modified. The peptides are useful in conditions of acute and chronic inflammation such as in autoimmune diseases.</p> |  |  |   |

09/763293

3002 Rec'd PCT/PTO 21 FEB 2001

**COURTESY COPY OF THE  
INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

09/763293

JC02 Rec'd PCT/PTO 21 FEB 2001



**COURTESY COPY OF THE  
PCT APPLICATION AS  
ORIGINALLY FILED  
WITH SEQUENCE LISTING**

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

|  |  |  |  |
|--|--|--|--|
| Applicant's or agent's file reference<br>9803 PCT  |  | <b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)                                  |  |
| International application No.<br>PCT/IL99/00448  | International filing date (day/month/year)<br>19/08/1999 | Priority date (day/month/year)<br>21/08/1998   |  |
| International Patent Classification (IPC) or national classification and IPC<br>C07K14/55  |  |  |  |
| Applicant<br>YEDA RESEARCH AND DEVELOPMENT CO. LTD. et al.   |  |  |  |
| <p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of sheets.</p>  |  |  |  |
| <p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <li>I <input checked="" type="checkbox"/> Basis of the report</li> <li>II <input type="checkbox"/> Priority</li> <li>III <input checked="" type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li>IV <input checked="" type="checkbox"/> Lack of unity of invention</li> <li>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li>VI <input type="checkbox"/> Certain documents cited</li> <li>VII <input type="checkbox"/> Certain defects in the international application</li> <li>VIII <input type="checkbox"/> Certain observations on the international application</li> </ul> |  |  |  |
| Date of submission of the demand<br><br>13/03/2000   |  | Date of completion of this report<br><br>05.06.2000  |  |
| Name and mailing address of the international preliminary examining authority:<br> European Patent Office<br>D-80298 Munich<br>Tel. +49 89 2399 - 0 Tx: 523656 epmu d<br>Fax: +49 89 2399 - 4465  |  | Authorized officer<br><br>Stolz, B<br><br>Telephone No. +49 89 2399 8416  |  |

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/IL99/00448

**I. Basis of the report**

1. This report has been drawn on the basis of *(substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.)*:

**Description, pages:**

1-33 as originally filed

**Claims, No.:**

1-18 as originally filed

**Drawings, sheets:**

1/8-8/8 as originally filed

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

**III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

- ☐ the entire international application.  
☒ claims Nos. 1-5, 7, 9, 13.

because:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/IL99/00448

- ☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):
  
- ☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):
  
- ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
  
- ☒ no international search report has been established for the said claims Nos. 1-5, 7, 9, 13.

**IV. Lack of unity of invention**

1. In response to the invitation to restrict or pay additional fees the applicant has:

- ☐ restricted the claims.
- ☐ paid additional fees.
- ☐ paid additional fees under protest.
- ☐ neither restricted nor paid additional fees.

2. ☒ This Authority found that the requirement of unity of invention is not complied and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.
- ☒ not complied with for the following reasons:

**see separate sheet**

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☒ all parts.
- ☐ the parts relating to claims Nos. .

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/IL99/00448

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**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

|                               |                                |
|-------------------------------|--------------------------------|
| Novelty (N)                   | Yes: Claims 6, 8, 10-12, 14-18 |
|                               | No: Claims                     |
| Inventive step (IS)           | Yes: Claims 6, 8, 10-12, 14-18 |
|                               | No: Claims                     |
| Industrial applicability (IA) | Yes: Claims 6, 8, 10-12, 14-18 |
|                               | No: Claims                     |

**2. Citations and explanations**

**see separate sheet**

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/IL99/00448

1. Unity of invention

The application describes peptides derived from IL-2 having anti-inflammatory properties. IL-2 derived peptides having such properties have been previously described (WO95/00538). The present application contributes further peptides belonging to three basic groups identified by the structures of pep1, pep2, and pep3. All three groups are structurally different. Since there are no special structural features common to the three groups and since the anti-inflammatory property is not a special technical feature in the sense of R. 13.2 PCT, claims 6, 8 and 10 are not linked in such a way as to form a single inventive concept.

Nevertheless, in agreement with R. 68.1, this report refers to all three groups.

2. Reasoned statement

The peptides of claims 6, 8, and 10 have not been described in the cited prior art. Also, their anti-inflammatory properties could not be derived from the cited prior art in an obvious way.

The method of claim 11 could also not be derived from the cited prior art in an obvious way.



# PATENT COOPERATION TREATY

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

BEN-AMI, Paulina  
Yeda Research & Development Co. Ltd  
Weizmann Institute of Science  
P.O. Box 95  
Rehovot 76100  
ISRAEL

PCT

## NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Rule 71.1)

Date of mailing  
(day/month/year) 05.06.2000

Applicant's or agent's file reference  
9803 PCT

### IMPORTANT NOTIFICATION

International application No.  
PCT/IL99/00448

International filing date (day/month/year)  
19/08/1999

Priority date (day/month/year)  
21/08/1998

Applicant  
YEDA RESEARCH AND DEVELOPMENT CO. LTD. et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

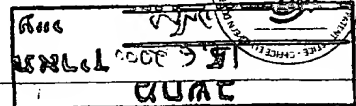
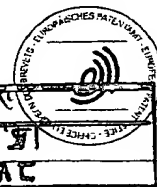
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## PCT

WIPO

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

|   |   |  |
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| Applicant's or agent's file reference<br>9803 PCT   | <b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) |  |
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# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/IL99/00448

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4. Additional observations, if necessary:

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- ☒ claims Nos. 1-5, 7, 9, 13.

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## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/IL99/00448

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**INTERNATIONAL PRELIMINARY  
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International application No. PCT/IL99/00448

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**1. Statement**

|                               |      |        |                    |
|-------------------------------|------|--------|--------------------|
| Novelty (N)                   | Yes: | Claims | 6, 8, 10-12, 14-18 |
|                               | No:  | Claims |                    |
| Inventive step (IS)           | Yes: | Claims | 6, 8, 10-12, 14-18 |
|                               | No:  | Claims |                    |
| Industrial applicability (IA) | Yes: | Claims | 6, 8, 10-12, 14-18 |
|                               | No:  | Claims |                    |

**2. Citations and explanations**

**see separate sheet**

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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1. Unity of invention

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